

Babbush CA, Hahn JA, Krauser JT, Rosenlicht JL. *Dental Implants: The Art and Science, 2nd edition. Philadelphia, Pa: Saunders; 2011.*

This text offers the reader valuable state-of-the-art insights into all aspects of dental implant treatment.

There are 30 chapters that have been co-authored by many outstanding clinicians from private practice and academia. The topics covered are all-inclusive for the practice of implant dentistry, including the business of implant dentistry, risk management, master planning the implant case, contemporary radiographic evaluation, bone physiology and development, soft tissue management, subantral grafting techniques, inferior alveolar nerve lateralization, mental neurovascular distalization, graftless treatment of the atrophic maxilla, guided tissue surgery, immediate loading of dental implants, teeth in a day and teeth in an hour, all-on-4 concept, laboratory procedures, and treatment of complications and failures, plus other topics relevant for today's implant dentist.

This text has an easy to read, present tense format with multiple step-by-step photographs illustrating simple and complex procedures. For each of the procedures, the authors offer multiple case reports that provide for a variety of clinical circumstances from which the reader can learn. The chapters are well-referenced and present contemporary concepts. There is a strong Nobel Biocare influence in the text, but the concepts presented can be extrapolated to other implant systems and therefore should not represent a deterrent to the non-Nobel Biocare user.

The text is designed for the clinician, and will act as a teaching how-to text for the novice and an updated reference for the experienced practitioner.

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Brown KV, Li B, Guda T, Perrien DS, Guelcher SA, Wenke JC. *Improving bone formation in*

a rat femur segmental defect by controlling bone morphogenetic protein-2 release. Tissue Eng Part A. 2011;17:1735–1746.

This article investigates the effects of rhBMP-2 release by 3 methods: 1) burst formulation, 2) burst plus sustained release, and 3) sustained release only. Burst release is the formulation used in orthopedic and oral surgical procedures currently. However, the burst release format necessitates supra-physiological doses to achieve the desired osteogenic effect. This supraphysiological dose introduces the risk of ectopic bone formation, harsh inflammatory response, and increased cost. The study examined biodegradable polyurethane (PUR) and PUR/microsphere (PUR/poly [lactic-co-glycolic acid]) composite scaffolds with variable rhBMP-2 release kinetics in comparison to the standard collagen sponge delivery system in a critical-sized rat segmental defect model. Microcomputer tomography analysis demonstrated that a burst of rhBMP-2 followed by a sustained release from PUR scaffolds regenerated 50% additional new bone than the collagen sponge laden with rhBMP-2; however, the sustained release formulation without the burst failed to form significantly more bone than the scaffold without rhBMP-2. There are three conclusions: 1) the optimal release profile for rhBMP-2 is a burst followed by sustained release, 2) this can be achieved using PUR scaffolds, and 3) improved pharmacokinetics formulations regenerate more bone than the current clinically available formulations.

The development and clinical use of rhBMP-2 highlights the overlap between the practices of orthopedic surgery and implant dentistry. Failures of oral implant grafts, nonunion of open fractures, and other severe bone injuries represent similar healing frustrations for both dentists and orthopedic surgeons. This animal study investigating the optimal rhBMP-2 pharmacokinetic release profiles should be of value to both disciplines.

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